

Lesson 2—Different Types of Maps

Understanding the Purpose of Different Maps



One class period of instruction

This lesson introduces students to the multiple kinds of maps that geographers use for different purposes.

Students learn the different *elements of a map*, are introduced to types of *geographic maps*, and analyze a *variety of maps* to try and identify the purpose and characteristics of each map.

The next day's lesson will give students a chance to really understand each of the map elements.

Copy instructions

Print one handout for each student.



Gather different types of maps for the map gallery walk. Can include as many different types as you want, but also some non-geographic maps (mall directory, tourist maps, etc).

Materials Needed

- **Map Elements** handout
- **Different Maps and Purposes** handout
- **Map Gallery Notes**
- **Map Use Questions Assignment**
- Several different maps for map gallery walk
 - Find maps online, in textbooks, used book stores and thrift stores, travel agents, but try to have a variety.

National Standards

NGS 1A—Recognize characteristics and applications of maps, globes, aerial and other images.

NGS 1C—Evaluate when to use certain maps or other tools and technology to solve geographic problems.

Learning Objectives

1. Recognize characteristics of different map types.
2. Decide how to choose different maps for different purposes.

Handout

- Map Use Question Assignment

Evidence of Learning

Students are given a task and must choose a map that is best suited to complete that task.

Lesson Sequence

1. Write your ideas

What are maps used for? What are some different types of maps?

2. Define

Map—a representation, usually flat, of the whole or part of an area.

3. Redefine and Discuss

What are maps and what are they used for?

4. Introduce

Introduce map elements: Key/Legend, Symbols and Labels, Direction, Scale, Grid and Index.

5. Lecture or Review

Different types of maps and different purposes.

6. Map Gallery Walk

Students walk to different stations and observe maps or groups rotate to different stations. Students take notes on the differences between the types of map or the purposes of the map and find elements on the map.

7. Discuss

Call on students to share quickly about each map.

8. Map Use Questions (in class or homework)

Students read the task and decide which type of map they would use and why.

Map Use Question Assignment Answers

1. You need to plan a delivery route for a trucking company that delivers furniture. What kind of map do you use and why?

Road Map—It shows the roads and highways needed to design a route.

2. You are buying some land to build a house. You want to make sure that the land is not too steep to build on. What kind of map do you use and why?

Topographical Map—It shows the slopes and steepness of land.

Handout

- Map Elements handout

Handout

- Different Maps and Purposes handout

PowerPoint®

Handout

- Map Gallery Notes

Handout

- Map Use Question Assignment

Lesson 2—Different Types of Maps

3. It is the zombie apocalypse and you are trying to find a location to rebuild a city. You want to make sure you will enjoy the weather all year round. What kind of map do you use and why?

Climate Map—It shows the year round type of weather of locations.

4. You are gathering intelligence for the CIA. You are required to describe the landforms of a country. What kind of map do you use and why?

Physical Map—It displays mountains, rivers, and other landforms.

5. It is still the zombie apocalypse and you are still trying to find a location to rebuild a city. You want to make sure you choose somewhere that has all the resources you need. What kind of map do you use and why?

Resource Map—It shows the locations of resources.

6. You are planning a trip to another continent. You want to see which countries you might be able to visit on your trip. What kind of map do you use and why?

Political Map—It shows the boundaries of countries.

DIFFERENT TYPES OF MAPS

What Are the Different Types of Maps Geographers Use?

Geographers definitely use maps, but there are *different kinds of maps*. Read on below to learn about different maps and their uses.

Some Maps Geographers Use



Physical Map

A *physical map* shows the **features** of an area, such as mountains, rivers, and lakes.

These maps usually use color to show the different landforms.

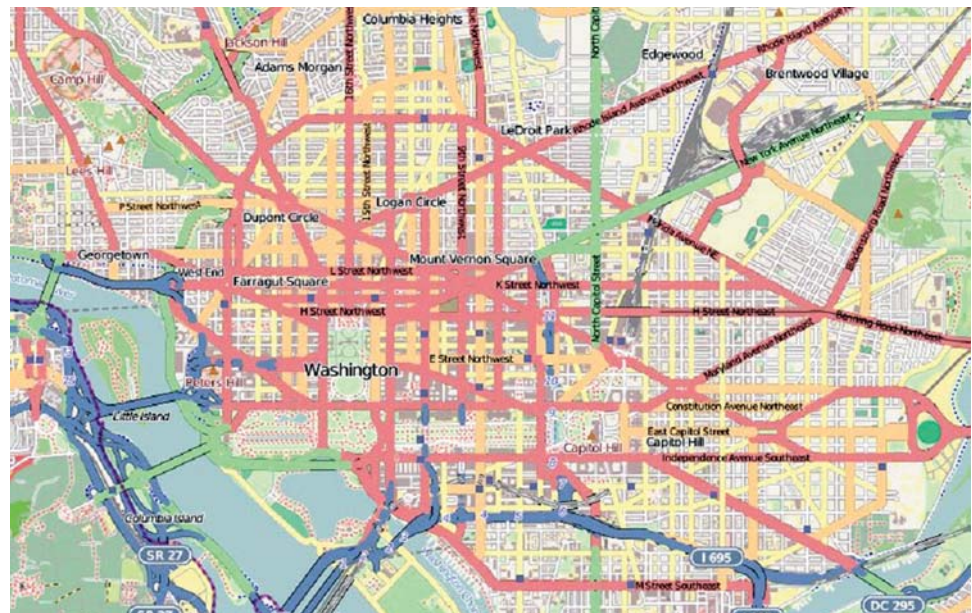
The map on the left is a physical map of the United States. In this map you can see mountains ranges, rivers, lakes, and oceans.

©OpenStreetMap contributors, CC BY-SA

Road Map

A *road map* shows major highways, airports, cities, railroad tracks, and local points of interest.

Road maps are most suitable for people who are trying to figure out driving directions. Road maps can have different **scale**, showing all the streets in a city or even all the highways in a country.



©OpenStreetMap contributors, CC BY-SA

The map above is a road map of Washington, DC. It shows some of the major roads and locations.

Political Map of the World, November 2011



Political Map

A political map shows countries, borders, or major cities.

This kind of map doesn't usually show physical features like mountains. A political map of the U.S. would show state boundaries, capitals, and major cities.

The map above is a political map of the world. It shows country names and borders.

Climate Map

A climate map shows the **average weather** of a region.

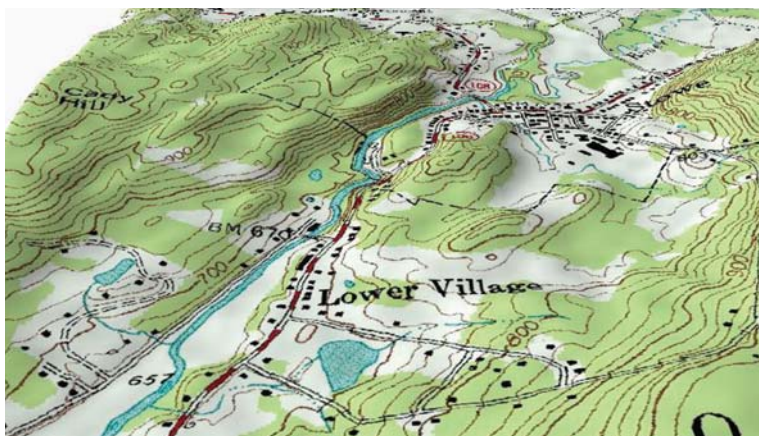
These maps show the different type of climate a region may have. A common way to classify climates is to use average precipitation and temperature.

The map on the right is a climate map of the world. In this map you can see regions of the world divided into several different climates, designated by color.



Tropical	Dry	Moderate	Continental	Polar	
Tropical wet	Semi-arid	Mediterranean	Humid continental	Tundra	Non-permanent ice
Tropical wet and dry	Arid	Humid subtropical	Subarctic	Ice cap	
		Marine west coast		Highlands	

Wikimedia Commons, File:ClimateMap_World.png, CC BY-SA
Map by Waitak and Splette.



Wikimedia Commons, File:Topographic-Relief-perspective-sample.jpg, CC BY-SA.
Map by Kbh3rd.

Topographical Map

A topographical map includes **contour lines** to show the **elevation** or height of an area.

The closer together the contour lines are, the steeper the land is.

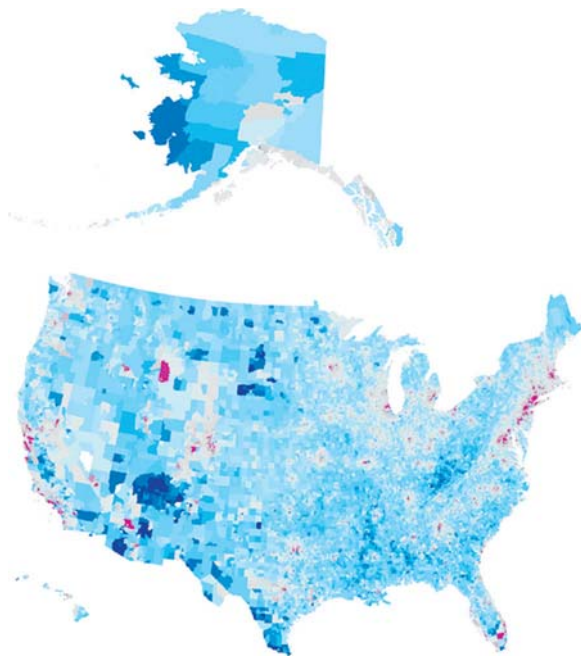
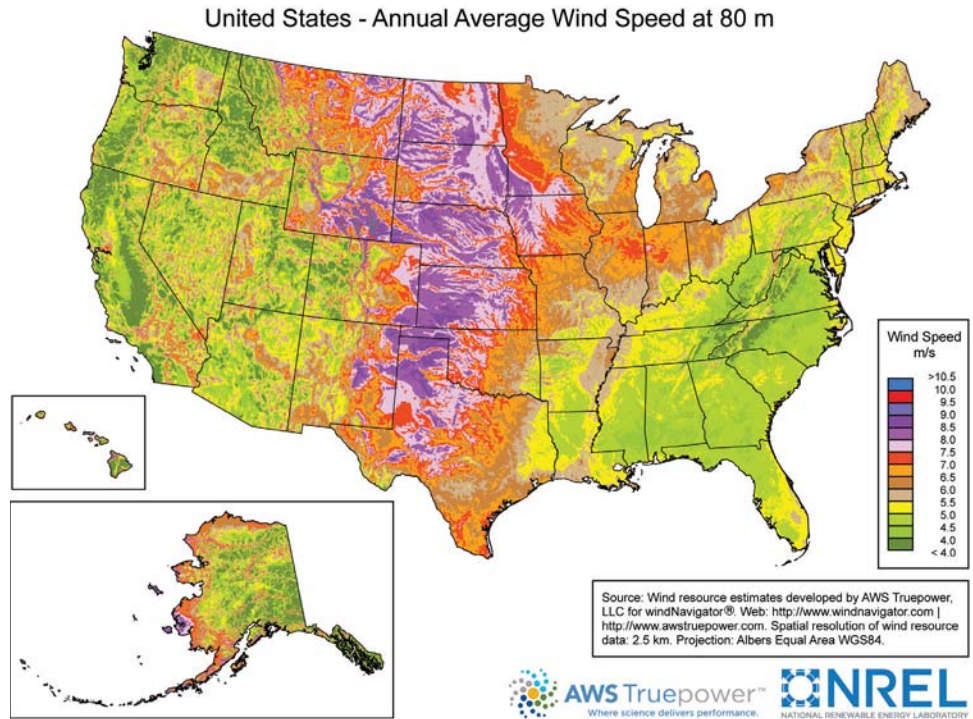
The map on the left is a topographical relief map of Stowe, VT. Stowe is a popular destination for skiing. With this map you can distinguish steep hills from flatter land.

Resource Map

A resource map shows the distribution of various **resources**.

Resources (such as minerals, lumber, agriculture) are not distributed equally around the world. Resource maps help to show the amount of resources in an area.

The map on the right is a wind resource map of the United States. This map shows the average wind speeds for an entire year. Colors show the different amount of wind an area gets. This would be useful for placing tall wind turbines to generate electricity.



©Bill Rankin, www.radicalcartography.net. CC BY-SA 3.0

Economic Map

An economic map shows information about **wealth** and money.

Just as how resources are not distributed equally, wealth or money is not distributed equally either.

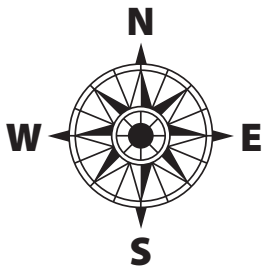
The map on the left is an economic map of the United States. This map shows the amount of money in different regions. The data or information to make this map came from the U.S. Census Bureau. The Census Bureau does a big survey (the census) of all U.S. citizens every 10 years.

MAP ELEMENTS

What Are the Important Parts of a Map?

Maps are very helpful tools. *Map elements* are the parts of a map that make it easier to read. Almost all maps use most of these elements. The basic elements of a map are *direction, scale, symbols and legend, labels, and grid and index.*

Common Map Elements



Direction

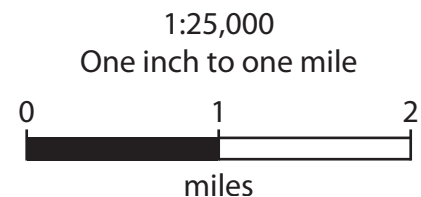
Direction is shown on a map by using a *compass rose*. The compass rose shows the directions of the map so that map readers can relate those directions to the real world.





















Sometimes a compass rose will just show *North*. If you know which way North is, you can figure out *East, West, and South*.

Scale

Scale shows the *distance* measurements on the map. If a map is *to scale*, map readers can measure parts of the map to calculate accurate distances in the real world.

Scale can be displayed *numerically, verbally, or graphically.*



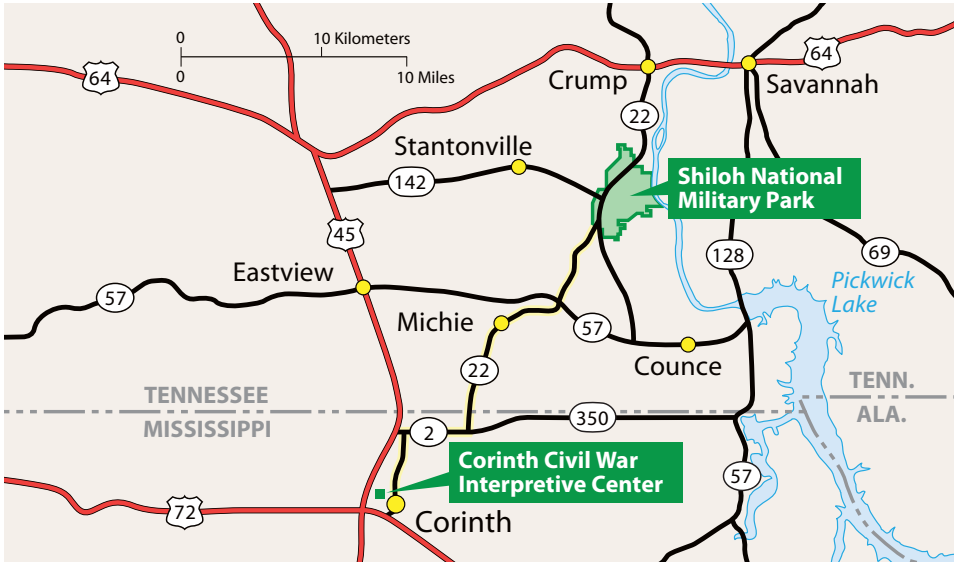
 Interstate	 NPDES Facilities
 US and State Highway	 Dams
 Local Thoroughfare	 ESA Points
 Toll Road	 State Boundary
 Ramp	 Public School
 Railroad	 Private School
 USGS 100K Index	 Airports
 Municipal Boundary	 ESA
 Water Bodies	 Tribal Land
 Rivers	 USCG Jurisdiction

Map Legend produced by the EPA Region 1 GIS Center on April 20th, 2006.

Symbols and Legend

Symbols are graphics that represent something on a map. They can be a dot, a line, shape, or an icon that looks similar to what it represents.

Symbols are identified in the *legend*. The legend is usually a small box in a corner or on the side. It includes the symbols and their meaning. It is also referred to as the **key**.



Map courtesy of the National Park Service.

Labels

Labels are the words that identify a location. They may show something with a specific name (streets or rivers).

Labels can also be used to represent something if there is only one of it, instead of making up a symbol to just represent one thing.

Grid and Index

Not all maps use a *grid and index*, but it is very useful if the map will be used to find locations. A grid and index is common in an atlas and on road maps.

A *grid* is a series of horizontal and vertical lines running across the map. Sometimes maps will use *latitude and longitude*, but smaller maps use a more basic grid with numbers and/or letters.

The *index* helps the map reader find a specific location, by following the numbers and letters in the grid.

Notice that the index is in *alphabetical order*, so it is easy to look up the name of the place.

Follow the *coordinates* (A2, B3, etc.) next to the location's name to find the location on the map.

The map to the right shows the *Galápagos Islands*.



Index

- Española—C3
- Fernandina—A2
- Genovesa—C1
- Isabela—B2
- Marchena—B1
- Pinta—B1
- San Cristobal—D2
- San Salvador—B2
- Santa Cruz—C2
- Santa Fe—C2
- Santa Maria—C3

Name: _____ Date: _____ Per.: _____

MAP GALLERY NOTES

Take Notes On Each of the Maps You Observe

As you travel around to each map, try to identify the *map elements* it uses, the *purpose* of the map, and the *type of map* it is. *Be ready to discuss* your notes.

Random Notes:

Map #1

1. Draw some of the common *symbols* this map uses.

2. Do you think this map uses accurate size (*scale*)?

Yes No Not Really

3. Can you tell which way is North (*direction*)?

Yes No Not Really

4. Is there a *legend* or *key*?

Yes No Not Really

5. What is the *purpose* of this map?

6. What *type* of map do you think this is?

Map #2

1. Draw some of the common *symbols* this map uses.
2. Do you think this map uses accurate size (*scale*)?
Yes No Not Really
3. Can you tell which way is North (*direction*)?
Yes No Not Really
4. Is there a *legend* or *key*?
Yes No Not Really
5. What is the *purpose* of this map?
6. What *type* of map do you think this is?

Map #3

1. Draw some of the common *symbols* this map uses.
2. Do you think this map uses accurate size (*scale*)?
Yes No Not Really
3. Can you tell which way is North (*direction*)?
Yes No Not Really
4. Is there a *legend* or *key*?
Yes No Not Really
5. What is the *purpose* of this map?
6. What *type* of map do you think this is?

Map #4

1. Draw some of the common *symbols* this map uses.
2. Do you think this map uses accurate size (*scale*)?
Yes No Not Really
3. Can you tell which way is North (*direction*)?
Yes No Not Really
4. Is there a *legend* or *key*?
Yes No Not Really
5. What is the *purpose* of this map?
6. What *type* of map do you think this is?

Map #5

1. Draw some of the common *symbols* this map uses.
2. Do you think this map uses accurate size (*scale*)?
Yes No Not Really
3. Can you tell which way is North (*direction*)?
Yes No Not Really
4. Is there a *legend* or *key*?
Yes No Not Really
5. What is the *purpose* of this map?
6. What *type* of map do you think this is?

Map #6

1. Draw some of the common *symbols* this map uses.
2. Do you think this map uses accurate size (*scale*)?
Yes No Not Really
3. Can you tell which way is North (*direction*)?
Yes No Not Really
4. Is there a *legend* or *key*?
Yes No Not Really
5. What is the *purpose* of this map?
6. What *type* of map do you think this is?

Map #7

1. Draw some of the common *symbols* this map uses.
2. Do you think this map uses accurate size (*scale*)?
Yes No Not Really
3. Can you tell which way is North (*direction*)?
Yes No Not Really
4. Is there a *legend* or *key*?
Yes No Not Really
5. What is the *purpose* of this map?
6. What *type* of map do you think this is?

Name: _____ Date: _____ Per.: _____

MAP USE QUESTION ASSIGNMENT

Which Map Would You Use to Answer These Questions?

Read the scenarios below. Determine *which type of map* you would use to help you solve the problem. *Explain your answers.*

1. You need to plan a delivery route for a trucking company that delivers furniture. What kind of map do you use and why?
2. You are buying some land to build a house. You want to make sure that the land is not too steep to build on. What kind of map do you use and why?
3. It is the zombie apocalypse and you are trying to find a location to rebuild a city. You want to make sure you will enjoy the weather all year round. What kind of map do you use and why?
4. You are gathering intelligence for the CIA. You are required to describe the landforms of a country. What kind of map do you use and why?
5. It is still the zombie apocalypse and you are still trying to find a location to rebuild a city. You want to make sure you choose somewhere that has all the resources you need. What kind of map do you use and why?
6. You are planning a trip to another continent. You want to see which countries you might be able to visit on your trip. What kind of map do you use and why?